UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/680,059 | 10/07/2003 | Steve Searby | 502453 | 8284 |

23626 7590 11/18/2004

LEYDIG VOIT & MAYER, LTD
6815 WEAVER ROAD
ROCKFORD, IL 61114-8018

| EXAMINER | |
|---|---|
| SALDANO, LISA M | |
| **ART UNIT** | **PAPER NUMBER** |
| 3673 | |

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|---|---|---|---|
| *Office Action Summary* | **Application No.**<br>10/680,059 | **Applicant(s)**<br>SEARBY, STEVE | 9 |
| | **Examiner**<br>Lisa M. Saldano | **Art Unit**<br>3673 | |

***-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --***

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on 09 August 2004.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-23 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-23 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 8, 16-18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulrich (3,952,810) in view of Flechs (4,461,598).

Ulrich discloses a slit trenching and cable laying device comprising a mounting yoke 131, a turf slicing vertical blade 146 coupled to the mounting yoke with a forward contact area 148 and a cable guide tube 150 adapted to engage and guide the cable during the laying operation (see column 6, lines 44-55) and Fig.4. The cable guide 150 has a cable inlet for receiving the cable and a cable outlet for releasing the cable.

Regarding claims 8 and 20, Ulrich illustrates that the cable guide 150 is curved at the inlet and the outlet.

Regarding claims 16 and 17, Ulrich discloses that the mounting yoke 131 includes a three point hitch with receptacles adapted to be connected to other support means (see column 6, lines 31-43). Ulrich also discloses another embodiment comprising a hitch 26 also comprising receptacles for connection to the drawbar of a tractor for towing the device (see column 2, lines 53-61).

Regarding claim 18, Ulrich discloses a covering unit 195 having a pair of wheels 200, 201 coupled to mounting yoke 131 for closing and filling the trench after the cable or line has been laid (see column 9, lines 9-40).

However, Ulrich fails to disclose a pair of angularly displaced turf slicing wheels.

Flechs discloses a machine 31 for installing drip irrigation conduit. The machine comprises a pair of turf slicing wheels or coulters 95,96 angularly displaced relative to one another and relative to the horizontal axis of the machine. Flechs discloses using a pair of coulters and a plow with the axis of one coulter inclined to the horizontal so that the two coulters and a plow generate a furrow into which a conduit is laid (see column 2, lines 60-65 and column 6, lines 7-15).

Regarding claim 2, and as broadly claimed by the applicant, Flechs discloses that the pair of turf slicing wheels are angularly displaced relative to one another along a horizontal and vertical axis of a mounting yoke.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the slit trenching and cable-laying device of Ulrich to incorporate a pair of angularly displaced turf slicing wheels, as taught by Flechs, instead of the turf slicing vertical blade, because the pair of angularly displaced turf slicing wheels form a well-formed nook in which to place the cable with sufficient width to receive the cable without disturbing much of the earth. Furthermore, the pair of angularly displaced turf slicing wheels function to provide a place in which to bury the cable, which is essentially the function of the a turf slicing vertical blade of Ulrich.

Regarding claims 21-22, although Ulrich and Flechs fail to explicitly disclose methods of laying cable under a lawn, their disclosures and illustrations disclose the basic steps required to develop a method such as the method recited in the claims of the present application.

3. Claims 6, 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulrich in view of Flechs, as applied to claim 1 above, in further view of Roy (3,722,224).

Ulrich and Flechs disclose inventions as described above.

However, Ulrich and Flechs fail to explicitly disclose a feed tube support extension member.

Roy discloses a submarine pipeline trencher for laying pipeline or cable (see column 1, lines 5-10). Roy discloses the use of a pair of angularly displaced turf slicing wheels 118 defining forward contact areas that form a sharp V-shaped trench 126 in the earth. The V-shaped trench receives portions of the pipe or cable 48 (see column 4, lines 56-64 and Figs. 7&8). Roy also discloses a support beam 112 that sliding receives a cable or pipeline for guiding purposes.

Regarding claims 6, 7 and 11, as broadly claimed by the applicant of the present invention, Roy discloses a guide tube extension member 122 coupled to the guide tube 112 in proximity to the cable outlet.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the slit trenching and cable-laying device of Ulrich to incorporate a pair an extension member, as taught by Roy, because both inventions are directed to the placement of elongate material in a furrow in the ground. Roy's extension member represents a structural support member that could easily be incorporated into the guiding structure of Ulrich to stabilize and reinforce the structure and frame of Ulrich's guiding devices.

4. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulrich in view of Flechs, as applied to claim 21 above, in further view of Wasserburger (US 2004/0205987 A1).

Ulrich and Flechs disclose inventions as described above.

However, Ulrich and Flechs fail to explicitly disclose a step of watering a lawn prior to manipulating a pair of turf slicing wheels/blades on a lawn.

Wasserburger discloses a fluid assisted plow in a patent application publication filed on April 9, 2003. Wasserburger discloses a spray system connected to a plow blade positioned to spray water onto a plow blade and the earth (see page 1, paragraph [0006]). Wasserburger further discloses that water lubricates the earth surrounding the blade as well as the blade itself. Wasserburger further details that the water provides lubrication AND assists the blade in cutting through the earth.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the implied method steps of Ulrich and Flechs to incorporate a step of watering the earth prior to slicing the earth because, as taught by Wasserburger and known to people possessing ordinary skill in the art, the water behaves as a lubricant for the blade to move more easily through the soil.

5. Claims 3-5, 9, 10, 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulrich in view of Flechs, as applied to claim 1 above, in further view of Johnson (2,314,045).

Ulrich and Flechs disclose the inventions as described above.

More specifically, Ulrich discloses a covering unit 195 having a pair of wheels 200, 201 coupled to mounting yoke 131 for closing and filling the trench after the cable or line has been laid (see column 9, lines 9-40).

However, Ulrich and Flechs fail to disclose a pair of angularly positioned turf closing wheels. They also fail to disclose a guide wheel with a groove.

Johnson discloses a means to protect lawns and fields comprising wire that is partially buried underground by way of a ground splitting disk 6 and a pair of angularly positioned turf closing wheels 32 (see Figs. 2&4). Johnson discloses that the wheels are adjusted to pack the soil (see page 2, column 1, lines 1-10).

Regarding claim 4, Johnson discloses a pair of arms 33 coupled to mounting yoke 13 of the invention wherein the arms are pivoted or swiveled at 48 (see page 2, lines 11-19).

Regarding claim 5, Johnson discloses an adjustable ratchet device 49 that functions as a positioning member to limit travel of the arms 33 (see page 2, lines 11-19).

Regarding claims 9 and 10, Johnson discloses a spring 20 with a tensioning nut (see Fig.2) coupled to the turf closure wheels 32 via the mounting yoke 13 and arms 33.

Regarding claim 12, Johnson discloses a wire-carrying spool 26 or wheel having a groove around an outer periphery thereof to accommodate wire to be laid.

Regarding claim 19, Johnson discloses that the turf closing wheels 32 are laterally displaced from one another (see Fig. 4) and apart from the central location of the trailing edge of the turf slicing disk 6.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the covering wheel of Ulrich to comprise a pair of angularly positioned turf closing wheels, as suggested by Johnson, because they both serve to compact the soil after an elongated member has been placed therein.

Furthermore, it would have been obvious to provide a guide with a groove for holding cable or wire on the invention of Ulrich, as taught by Johnson, because such a feature is common in methods of storing and paying out elongated material such as cable, pipe or wire.

Furthermore, regarding claim 19, it would have been obvious to one of ordinary skill in the art to located the turf closing wheels apart and at a greater distance from the turf slicing means, as disclosed by Johnson, as a matter of design choice and also to maintain proper clearance for the turf closing wheels and the turf slicing means to operate properly without spatial conflict.

6. Claims 13, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulrich in view of Flechs and Johnson, as applied to claim 12 above, in further view of Ward et al (4,198,103).

Ulrich as modified by Johnson above teaches a cable laying apparatus with a cable feed mechanism in the form of a guide wheel with a groove (see details above).

However, Ulrich, Johnson and Flechs fail to disclose the use of a wheel cleaning mechanism to remove foreign debris therefrom.

Ward et al disclose a cable laying machine 1 comprising a pair of front and rear scrapers 29,30 to maintain a surface of the cable laying machine clean of mud, grit, stone and the like (see abstract, Figs.2&7 and column 2, lines 58-62). Each scraper comprises an angle iron structure disposed as an inverted "V" positioned adjacent grooved formed by ribs 15 on traction wheels 4,5.

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the mud and debris scrapers taught by Ward et al to the invention of Ulrich as modified by Johnson, because the scrapers provide for more efficient and smooth working of the various moving mechanical parts of the invention, as taught by Ward et al. Ward et al teach that the scrapers are useful in the environment of a cable laying machine where components of the machine may be exposed to mud, stones and grits from the surface wherein the cables are laid.

Furthermore, it would have been obvious to one of ordinary skill in the art to provide the scrapers wherever they can be of use for keeping surfaces clean on the cable-laying machine, such as being on a guide wheel cleaning mechanism. The exact shape and orientation of the scrapers is a matter of design choice, as long as they perform the function of debris removal in the manner suggested by Ward et al.

## *Response to Arguments*

7. Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

## *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa M. Saldano whose telephone number is 703-605-1167. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather C. Shackelford can be reached on 703-308-2978. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

lms

HEATHER SHACKELFORD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600